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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,177	04/19/2004	Mukunda Prema	81044342 / FMC 1632 PUS	3176

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EXAMINER
TRAN, DALENA

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with th c rresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _17 April 2006_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-13 and 19-25_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-5,7,19,20,22 and 24_ is/are rejected.

7)☒ Claim(s) _6,8-13,21,23,25_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Notice to Applicant(s)

1.   This office action is responsive to the amendment filed on 4/17/06. As per

request, claims 1-2, has been amended. Claims 14-18 has been cancelled. Claims 19-25

has been added. Thus, claims 1-13, and 19-25 are pending.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   Claim 1, is rejected under 35 U.S.C.103(a) as being unpatentable over Ibaraki

et al. (5856709) in view of Yakes et al. (6885920).

        As per claim 1, Ibaraki et al. disclose a method for controlling on/off states of an

engine in a hybrid electric vehicle powertrain, the method comprising the steps of:

generating a plurality of request state variables based on a comparison of vehicle

operating conditions and requirements, each variable indicating an active or inactive

status of a plurality of engine requests (see columns 15-16, lines 45-65; and columns

27-28, lines 23-44), combining at least two request state variables to form a combined

request state variable that contains active requests in the at least two request state

variables (see columns 16-17, lines 66-42), simplifying the combined request state

variable to eliminate any redundant requests and to resolve any conflicting requests (see

column 20, lines 1-47; and columns 33-34, lines 46-51), providing a final request state

variable, and evaluating the final request state variable to determine whether a change in

engine state is desirable (see columns 21-22, lines 35-30). Ibaraki et al. do not disclose

prioritizing the active request state variables. However, Yakes et al. disclose prioritizing

the active request state variables according to a predetermined schedule (see columns

17-18, lines 34-14; and columns 19-20, lines 15-8), and selecting at least two active

request state variables of higher priority than other request state variables in the plurality

of request state variables (see columns 20-21, lines 8-12). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to modify the teach of

Ibaraki et al. by combining prioritizing the active request state variables for controlling

the plurality of electric motors in a vehicle communication network.

4.   Claims 2, 5, 7, 19-20, 22, and 24, are rejected under 35 U.S.C.103(a) as being

unpatentable over Wilton et al. (US 2004/0174125 A1) in view of Yakes et al. (6885920).

As per claim 2, Wilton et al. disclose a method of controlling the on/off state of an

engine in a hybrid electric vehicle powertrain comprising the following steps: generating

a plurality of request state variables based on a comparison of vehicle operating

conditions and requirements, each variable indicating the active or inactive status of each

of a plurality of engine requests, the value of each request state variable being

constrained to a set of fundamental request states (see [0056] through [0062]), combining

at least two request state variables to form a combined request state variable that contains

active requests in the at least two request state variables (see [0063]), simplifying the

combined request state variable to eliminate any redundant requests and to resolve any

conflicting requests (see [0067] through [0070]), providing a final request state variable,

and evaluating the final request state variable to determine whether a change in engine

state is desirable (see [0071] through [0075]). Wilton et al. do not disclose prioritizing

the active request state variables. However, Yakes et al. disclose prioritizing the active

request state variables according to a predetermined schedule (see columns 17-18, lines

34-14; and columns 19-20, lines 15-8), and selecting at least two active request state

variables of higher priority than other request state variables in the plurality of request

state variables (see columns 20-21, lines 8-12). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify the teach of Wilton

et al. by combining prioritizing the active request state variables for controlling the

plurality of electric motors in a vehicle communication network.

As per claim 5, Wilton et al. disclose engine requests are grouped in hierarchical

levels through the combining and simplifying steps (see [0086] to [0087]).

As per claim 7, Wilton et al. do not disclose binary word. However, Yakes et al.

disclose each fundamental request state comprises a 6 bit binary word, each bit

identifying whether an engine request state is active or inactive (see column 10, lines

8-25; and column 41, lines 11-51). It would have been obvious to one of ordinary skill in

the art at the time the invention was made to modify the teach of Wilton et al. by

combining binary word to represent engine state of the vehicle operation.

Also, as per claim 19, Yakes et al. disclose the step of evaluating the final request

state variable includes the step of: transitioning a state machine from an engine state to an

engine on state in accordance with a predetermined relationship of engine request

variables which identify an active status or an inactive status of engine requests (see

columns 19-20, lines 15-7).

Also, as per claim 20, Yakes et al. disclose the step of evaluating the final request

state variable includes the step transitioning a state machine from an engine on state to an

engine off state in accordance with a predetermined relationship of engine request

variables, which identify an active status or an inactive status of engine requests (see

column 22, lines 8-59).

As per claim 22, Wilton et al. do not disclose binary word. However, Yakes et al.

disclose each fundamental request state comprises a 6 bit binary word, each bit

identifying whether an engine request state is active or inactive (see column 10, lines

8-25; and column 41, lines 11-51). It would have been obvious to one of ordinary skill in

the art at the time the invention was made to modify the teach of Wilton et al. by

combining binary word to represent engine state of the vehicle operation.

As per claim 24, Wilton et al. disclose the step of simplifying includes an

arbitration operation that follows the requests according to a predetermined priority (see

[0081] through [0084]).

5.   Claims 3-4, are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wilton et al. (US 2004/0174125 A1), and Yakes et al. (6885920) as applied to claim 2

above, and further in view of Ibaraki et al. (5856709).

As per claim 3, Wilton et al., and Yakes et al. do not disclose OR operation.

However, Ibaraki et al. disclose combining joins two or more request states through a

bitwise OR operation (see columns 22-23, lines 31-45). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to modify the teach of

Wilton et al., and Yakes et al. by combining OR operation to select each request state

variable of vehicle operation.

As per claim 4, Wilton et al. disclose an arbitration operation that follows the

requests according to a predetermined priority (see [0081] through [0084]).

6.   Claims 6, 8-13, 21, 23, and 25, are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Remarks

7.   Applicant's argument filed on 4/17/06 has been fully considered. Upon updated

search, the new ground of rejection has been set forth as above.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dalena Tran whose telephone number is 571-272-6968.

The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other

Friday.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Customer Service Representative or access to the automated information system, call

800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patent Examiner
Dalena Tran   June 21, 2006